

ABSTRACT

A stack (12) of a polymer electrolyte fuel cell (10) is immersed in a stack container case (14), in a liquid coolant (108) such as an organic solvent, and the stack (12) is operated in this state. The stack (12) whose temperature has risen by heat energy produced by the operation is cooled by the liquid coolant (108). The liquid coolant (108) which has cooled the stack (12) vaporizes, and is condensed by a condenser (16). Then, the liquid coolant (108) returns to the stack container case (14). The condenser (16) is cooled when the outside air is supplied into supply louvers (206), and contacts the condenser (16). The outside air is efficiently discharged by exhaust fans (222) through exhaust louvers (208).